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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/601,185	06/20/2003	Shinichi Kurita	007390 DISPLAY/AKT	6777

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EXAMINER
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MCDONALD, RODNEY GLENN

ART UNIT	PAPER NUMBER
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1753

DATE MAILED: 05/27/2005

Please find below and/or attached an Office communication concerning this application or proceeding.

## Office Action Summary

Application No.

10/601,185

Applicant(s)

KURITA ET AL.

Examiner

Rodney G. McDonald

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-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

### Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

### Status

- 1) ☒ Responsive to communication(s) filed on 17 March 2005.
- 2a) ☒ This action is **FINAL**. 2b) ☐ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

### Disposition of Claims

- 4) ☒ Claim(s) 1-29 is/are pending in the application.
- 4a) Of the above claim(s) \_\_\_\_\_ is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_\_ is/are allowed.
- 6) ☒ Claim(s) 1-25 and 29 is/are rejected.
- 7) ☒ Claim(s) 26-28 is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

### Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on \_\_\_\_\_ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.  
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

### Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some \* c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

\* See the attached detailed Office action for a list of the certified copies not received.

### Attachment(s)

- 1) ☐ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☐ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)  
Paper No(s)/Mail Date \_\_\_\_\_.
- 4) ☐ Interview Summary (PTO-413)  
Paper No(s)/Mail Date \_\_\_\_\_.
- 5) ☐ Notice of Informal Patent Application (PTO-152)
- 6) ☐ Other: \_\_\_\_\_.

## DETAILED ACTION

### *Claim Rejections - 35 USC § 102*

The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

Claims 1-3, 7, 8 and 11 are rejected under 35 U.S.C. 102(b) as being anticipated by Bourel et al. (U.S. Pat. 4,790,750).

Regarding claim 1, Bourel et al. teach a transfer chamber (Figures 1 and 2; Transfer lock 10; Column 3 lines 7-8) comprising a main body having sidewalls adapted to couple to at least one processing chamber and at least one load lock chamber (Figures 1 and 2; Treatment modules 12, 14 and 16-26 and a loading/unloading station 34 are mounted to an upper wall of the transfer lock. Column 3 lines 9-14, lines 19-20; Here the sidewall is interpreted as the upper wall since any wall on the chamber can be a side wall) and to house at least a portion of a robot adapted to transport a substrate between the at least one processing chamber and the at least one load lock chamber (A Feeding robot for providing substrates to the chambers from the loading station 34 is provided in the transfer chamber 10; Figures 1 and 2; Column 3 lines 21-35); a lid adapted to couple to and to seal a top portion of the main body of the transfer chamber (A domed lid sits atop the transfer chamber 10; Figure 1); and a domed bottom adapted to couple to and to seal a bottom portion of the main body of the transfer chamber (A

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domed bottom is located at a bottom portion of the main body of the transfer chamber;

Figure 1)

Regarding claim 2, the main body comprises a cylindrical interior wall (The transfer chamber is shaped as a circle; Column 3 lines 7-8) and an exterior wall having a plurality of flat regions each adapted to couple to at least one of a load lock chamber and a processing chamber (Figures 3 and 4 show an exterior wall having a plurality of flat regions adapted to couple to at least one of a load lock chamber and a processing chamber; Figures 3 and 4).

Regarding claim 3, the main body is machined from a single piece of material. (From Figure 1 the body is 10 is a single piece of material)

Regarding claim 7, the lid is domed. (From Figure 1 the lid of transfer chamber 10 is domed.)

Regarding claim 8, the domed bottom is machined from a single piece of material. (From Figure 1 the bottom is domed and formed from a single piece of material.)

Regarding claim 11, the domed bottom has a concave configuration such that a vertical distance between the lid and a central portion of the domed bottom is greater than a vertical distance between the lid and an outer edge of the domed bottom. (From Figure 1 the domed bottom is concave and the vertical distance between the lid and a central portion of the domed bottom is greater than a vertical distance between the lid and an outer edge of the domed bottom.)

***Claim Rejections - 35 USC § 103***

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

Claims 1-25 and 29 are rejected under 35 U.S.C. 103(a) as being unpatentable over Bourel et al. (U.S. Pat. 4,790,750) in view of Raaijmakers (U.S. Pat. 6,383,330).

Regarding Applicant's claims 1-3, 7, 8 and 11, Bourel et al. is discussed above and all is as applied above. (See Bourel et al. discussed above)

Regarding Applicant's claims 12-14, 18, 19, 22, 23 and 29) Bourel et al. is discussed above and teach all Applicants' claimed subject matter as discussed above. (See Bourel et al. discussed above)

The difference between Bourel et al. and the present claims is that the material of the chamber is not discussed (Applicant's claims 4, 9, 15, 20 and 24), the thickness of the sidewalls is not discussed (Applicant's claims 5 and 16), the top being flat is not discussed, (Applicant's claim 6 and 17), the thickness of the domed bottom is not discussed (Applicant' claims 10 and 21), the robot at least partially extending through the domed bottom into the transfer chamber is not discussed (Applicant's claims 12 and 23) and the process of forming/machining is not discussed (Applicant's claims 3, 8, 14, 19, 23 and 29)

Regarding Applicant's claims 4, 9, 15, 20 and 24, Raaijmakers teach a domed chamber that can be made of quartz. Although quartz is preferred, other materials

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having similar desirable characteristics may be substituted. Some of these desirable characteristics include a high melting point, the ability to withstand large and rapid temperature changes, chemical inertness, and high transparency to light. (Column 7 lines 24-35) Here the "other materials" are interpreted to include aluminum and stainless steel.

The motivation for utilizing other materials for the domed chamber is that it allows for utilizing particular characteristics for the chamber. (Column 7 lines 31-32)

Regarding Applicant's claims 5 and 16, Raaijmakers suggest that sidewalls can have various dimensions depending on the size of the substrates being processed. (Column 12 lines 66-68; Column 13 lines 1-7)

Regarding Applicant's claims 6 and 17, Raaijmakers suggest that only one upper or lower dome wall be curved while the other has no curvature at all. (Column 6 lines 9-15)

Regarding Applicant's claims 10 and 21, Raaijmakers suggest making the domed bottom have a thickness of "*about*" 5 mm, which is "*about*" 0.625 inches. (Column 6 lines 45-46)

The motivation for utilizing various dimensions for the chamber is that it allows for processing various substrates. (Column 13 lines 1-7)

Regarding Applicant's claims 12 and 23, Raaijmakers suggest allowing a holder, which extends through an opening of a lower domed wall. (Column 5 lines 44-48)

The motivation for allowing a holder to extend through the opening of a lower domed wall is that it allows for the chamber to be compact. (Column 2 lines 50-52)

Regarding the forming/machining, Raaijmakers suggest hot forming and/or machining the domed walls. (Column 6 lines 4-6)

Therefore, it would have been obvious to one of ordinary skill in the art at the time the invention was made to have modified Bourel et al. by utilizing a particular material for the chamber, utilizing a particular thickness for the sidewalls, utilizing a flat top, utilizing a particular thickness of the domed bottom, having the robot at least partially extend through the domed bottom into the transfer chamber and forming/machining of the chamber as taught by Raaijmakers because it allows for utilizing particular characteristics for the chamber, for processing various substrates and allows for the chamber to be compact.

***Allowable Subject Matter***

Claims 26-28 are objected to as being dependent upon a rejected base claim, but would be allowable if rewritten in independent form including all of the limitations of the base claim and any intervening claims.

The following is a statement of reasons for the indication of allowable subject matter:

Claims 26 and 27 are indicated as being allowable over the prior art of record because the prior art of record does not teach the first radius of curvature being greater than a radius of the main body.

Claim 28 is indicated as being allowable over the prior art of record because the prior art of record does not teach the second radius of curvature being about 5-20 times a thickness of the domed region.

***Response to Arguments***

Applicant's arguments filed March 17, 2005 have been fully considered but they are not persuasive.

***RESPONSE TO THE 35 U.S.C. 102 (B) ARGUMENTS:***

In response to the argument that Bourel et al. fail to teach a main body having sidewalls adapted to couple to at least one processing chamber and at least one load lock chamber, it is argued that Bourel et al. teach mounting chambers and loading/unloading chambers to walls on the chamber located on the upper part of the chamber. Here the Examiner has broadly interpreted "sidewalls" to include any wall on the "sides" of the chamber. Given that the chamber in Bourel et al. has multiple sides all walls located anywhere on the surface of the chamber can be considered "side" walls. While Applicants have pointed out that their specification is clear in the location of the "sidewalls" Applicants have failed to explicitly locate the sidewalls in relationship to the lid and domed bottom of the chamber in their claims. (See Bourel et al. discussed above)

***RESPONSE TO THE 35 U.S.C. 103 ARGUMENTS:***

In response to the argument that the prior art of record fails to suggest the robot adapted to transport a substrate between the at least one processing chamber and the at least one load lock chamber via the transfer chamber, it is argued that Bourel et al. establishes that a robot can move substrates between the at least one processing chamber and the at least one load lock chamber. Raaijmakers suggest that substrate holders (i.e. robot transport mechanisms are substrate holders) can extend through a



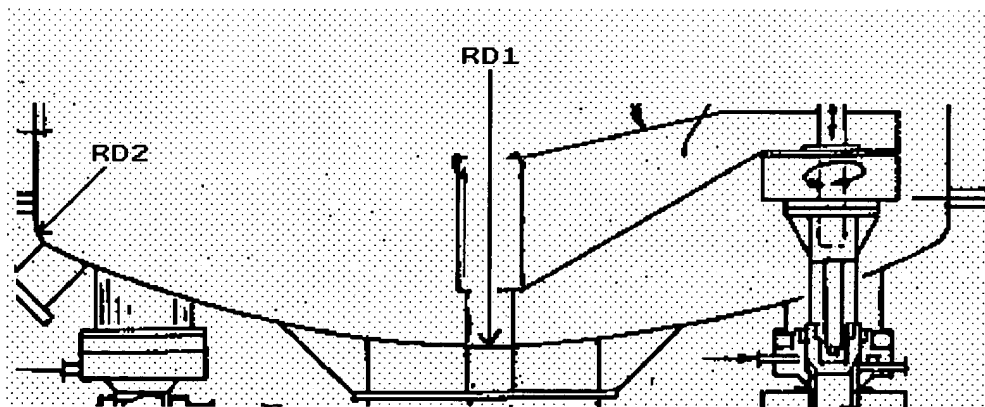
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domed bottom of a chamber. Thus the combination of Bourel et al. and Raaijmakers suggest a robot adapted to transport a substrate between the at least one processing chamber and the at least one load lock chamber (See Bourel et al. and Raaijmakers discussed above)

In response to the argument that no proper motivation has been provided to combine the references, it is argued that the use of the substrate holder extending through a domed bottom allows for a compact chamber. (See Raaijmakers discussed above)

In response to the argument that the prior art does not suggest a domed region having a first radiused portion having a first radius of curvature; and a second radiused portion extending between the first radiused portion and the cylindrical region and having a second radius of curvature that is less than the first radius of curvature, it is argued that Bourel et al. do teach the required radius of curvature as shown in the Figure below and compared to Applicant's claims and Applicant's Figure 4.

Bourel et al. :



***Conclusion***

**THIS ACTION IS MADE FINAL.** Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire **THREE MONTHS** from the mailing date of this action. In the event a first reply is filed within **TWO MONTHS** of the mailing date of this final action and the advisory action is not mailed until after the end of the **THREE-MONTH** shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than **SIX MONTHS** from the mailing date of this final action.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Rodney G. McDonald whose telephone number is 571-272-1340. The examiner can normally be reached on M- Th with Every other Friday off.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Nam X. Nguyen can be reached on 571-272-1342. The fax phone number for the organization where this application or proceeding is assigned is 703-872-9306.

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Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).



Rodney G. McDonald  
Primary Examiner  
Art Unit 1753

RM  
May 24, 2005